35. $300 to Professor G. G. Bogert for research into the law of conditional sales.

36. $2,000 to Professor V. Karapetoff for investigations on mechanical aids in the design of electrical machinery and lines, and a study of fields of force or flow, electric, magnetic and hydraulic.

Supplement to No. 19. $150 to Professor Wallace Notestein to continue his work of editing historical documents.

37. $1,500 to Professors Bancroft, Chamot and Merritt for the study of structural colors in feathers.

Supplement to No. 25. $150 to Professor A. A. Allen to enable him to continue his experiments in the artificial propagation of the ruffed grouse and the canvasback duck.

38. $450 to Professors Orndorff and Gibbs for a study of the absorption spectra of orthocresolsulphonphthalein and other related compounds.

39. $3,000 to Professor J. S. Shearer for the study of the selective absorption of X-rays, and of new methods of exciting X-ray tubes.

Supplement to No. 3. $450 to Professor J. C. Bradley to enable him to complete his illustrations of the wing venation of Hymenoptera.

Supplement to No. 11. An additional sum of $450 to Professor F. K. Richtmyer for further investigations in the laws of the absorption of X-rays.

40. $3,000 to Professor H. Diederichs for study of the infiltration of air into buildings through walls and windows, the development of a satisfactory heat treatment of "Kinite" alloy steel, and of the combustion process in a Diesel engine.

41. $700 to Professor C. R. Crosby for drawings of the genitalia of a group of spiders, the linyphiidæ, to be used in devising a natural system of classification of the species and to determine the limits of the general and their affinities.

42. $300 to Professor W. F. Willcox for statistical investigations.

43. $300 to Professor W. L. Westermann for editing Greek papyri owned by Cornell University.

THE STANDARDIZATION OF BIOLOGICAL STAINS

THE need of standardizing stains for biological uses has become increasingly evident during the last four or five years. During this period German stains have been either difficult to obtain or entirely unavailable; and the American products, although often excellent, have varied so much one from another as to give uncertain results. The manufacturers have been willing to meet the demand of biologists, but the latter have generally been uncertain just what they wanted. The efforts of the Society of American Bacteriologists to clarify the situation have already been mentioned in this publication[1]. More recently other societies have offered to assist in the work, many of the men concerned expressing a wish not to try to duplicate the Grubler stains, but to secure domestic stains better than their foreign predecessors.

The interest thus awakened led to a conference held on November 5, 1921, at the Chemists Club, New York City, to discuss the standardization of biological stains and the steps to be taken to develop a reliable American supply. The conference was under the auspices of the National Research Council, Dr. L. R. Jones, chairman of the Division of Biology and Agriculture, presiding. Those present were: L. R. Jones, H. E. Howe, and C. E. McClung, of the Research Council (Dr. McClung also representing the American Society of Zoologists); E. D. Ball and J. A. Ambler, of the Department of Agriculture; W. F. Keohan, of the Chemical Foundation; R. A. Harper and T. E. Hazen, representing the Botanical Society of America; H. J. Conn, representing the Society of American Bacteriologists; and R. T. Will of the Will Corporation.

H. J. Conn spoke for the Bacteriological Society, stating the interests of this society in the matter and showing what had been accomplished during the past year by cooperative work among the members of the society. He stated that stains must be standardized by three different methods: by chemical analysis, by testing for bacterial staining, and by testing for histological purposes. So far as bacterial staining is concerned, he considered his society to be already in a position to select satisfactory samples of basic fuchsin and methylene blue, and believed that the work now in progress on gentian violet would soon lead to a similar result in regard to that stain.

[1] H. J. Conn. The Production of Biological Stains in America. SCI. N. S., 53, 289-290.

The chemical and the histological work still remained to be done.

J. A. Ambler, of the Color Laboratory of the Department of Agriculture, with the approval of Dr. Ball, offered the resources of this laboratory to help in the work and undertake to make chemical analyses of samples that had already been tested by the Society of American Bacteriologists.

Drs. McClung, Harper and Hazen stated that some of the samples which were very satisfactory to bacteriologists did not give good results in cytological or histological staining, and agreed that considerable work was necessary to standardize the stains for this purpose. They offered to take steps to secure the active interest of their respective societies in this. It was pointed out that the zoologists had already appointed Dr. S. I. Kornhauser to assist in the work and that Dr. Victor C. Vaughan as chairman of the Division of Medicine had given assurance of the interest and support of that profession. Drs. Harper and McClung were appointed to act as a temporary committee with Dr. H. J. Conn on the organization of further plans including the nomination of a standing committee to the National Research Council. Such a committee has since been authorized to function under the Division of Biology and Agriculture, with the Division of Medicine cooperating, the membership of which is: H. J. Conn, Geneva, N. Y. (Chairman); S. I. Kornhauser, Denison University; L. W. Sharp, Cornell University; Frederick G. Novy, University of Michigan; F. B. Mallory, Boston City Hospital. The Chemical Foundation of New York City has agreed to support the undertaking, and has already deposited with the treasurer of the National Research Council $500.

INTERNATIONALIZING SERA STANDARDS

COOPERATION of the foremost laboratories of the world, including the United States, for the unification of international standards of antitoxic sera has been begun on a large scale by the League of Nations Health Committee. Two preparatory conferences have been held; the work has been divided amongst the various national laboratories, and the individual studies have been begun.

The United States has agreed to cooperate through the United States Public Health Service at Washington, and through the presence at the conference of Dr. Rupert Blue, assistant surgeon general, stationed at Paris. German scientific men, as well as Japanese, and representatives of all the greater European medical services will take part.

Up to the present there has been much confusion in the various national standards of measuring the strength of anti-toxic sera for diseases such as dysentery, tetanus, diphtheria, syphilis, etc. This has had two serious effects. Men of science have been handicapped in studying methods of treatment of various vital diseases abroad, because of the different standards of measuring the strength of the antitoxic sera employed; secondly, as international trade in sera is increasing, it represents not only an inconvenience, but a positive danger to have their strengths listed at varying standards.

In order to obviate these difficulties, the Health Committee of the League of Nations began a series of studies last October, which resulted in an international conference at London in December, to prepare plans for the first joint experimental inquiry of the sort ever attempted. A program was adopted whereby the study of the effects of the various standards was divided according to diseases amongst the various laboratories represented. To the Hygienic Laboratory at Washington it was proposed to allocate the study of tetanus and diphtheria. As soon as these studies have been completed, they will be coordinated through the State Serum Institute at Copenhagen.

Other bodies which will cooperate in the work are the Medical Research Council of Great Britain, The Pasteur Institute of France, the State Institute of Italy, State Institute of Warsaw, Hygienic Institute of Basle, Pasteur Institute of Brussels, Kitasato Institute of Japan, as well as Austrian and German organizations.

RELIEF WORK OF BRITISH UNIVERSITIES

MAURICE DE BUNSEN, chairman of the universities' committee, writes in *Nature* concern-